

Form PTO-1449
REV. 1-2001

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

ATTY. DOCKET NO.

SERIAL NO.

LIST OF PRIOR ART CITED BY APPLICANT
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APPLICANT

Woolan et al

FILING DATE

GROUP

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
HP	AA	5872630	2/1999	Johr et al.	356	369	
HP	AB	5666201	9/1997	Johr et al.	356	369	
HP	AC	5706212	1/1998	Thompson et al	356	369	
HP	AD	6320657	11/2001	Aspner et al.	356	369	
HP	AE	6134012	10/2000	Aspner et al.	356	369	
HP	AF	5973787	10/1999	Aspner et al.	356	369	
HP	AG	5877859	3/1999	Aspner et al.	356	364	
HP	AH	4053232	10/1997	Dill et al.	356	118	
HP	AI	5596406	1/1997	Rosenchwaig et al	356	327	
HP	AJ	4668086	5/1987	Redner	356	33	
HP	AK	5373359	12/1994	Woolan et al.	356	328	

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							YES	NO
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OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

	AR	<i>WO 01/90687 A2 by Thermo wave</i> ✓						
	AS							

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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form PT-3449
REV. 7-00

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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILED DATE IF APPROPRIATE
HP	AA	5504582	4/1996	Johr et al.	356	369	
HP	AB	5521706	5/1996	Green et al.	356	369	
HP	AC	6034777	3/2000	Johr et al.	356	369	
HP	AD	5929995	7/1999	Johr	356	369	
HP	AE	5329357	7/1994	Bernoux et al.	356	369	
HP	AF	5581350	12/1996	Chen et al.	356	369	
HP	AG	4917461	4/1990	Goldstein	350	286	
HP	AH	4772104	9/1988	Buhrer	350	403	
HP	AI	4961634	10/1990	Chipman et al.	350	403	
HP	AJ	6181421	1/2001	Hipner et al.	356	369	
HP	AK	5946098	8/1999	Johr et al.	356	369	

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
HP	AA	6 0 8 4 6 7 4	7/2000	Jahr et al.	356	364	
HP	AB	6 0 8 4 6 7 5	7/2000	Hertzinger et al.	356	369	
HP	AC	6 1 1 8 5 3 7	9/2000	Jahr et al.	356	369	
HP	AD	6 1 0 0 9 8 1	8/2000	Jahr et al.	356	364	
HP	AE	6 1 4 1 1 0 2	10/2000	Jahr et al.	356	364	
HP	AF	5 9 6 3 3 2 5	10/1999	Jahr et al.	356	364	
HP	AG	5 9 4 6 0 9 8	8/1999	Jahr et al.	356	364	
HP	AH	5 8 4 4 9 5	10/1895	ABBE			
HP	AI	4 5 5 6 2 9 2	12/1985	McThysse et al.	350	394	
HP	AJ	5 4 7 5 5 2 5	12/1995	Terner et al.	359	245	
HP	AK	3 8 1 7 6 2 4	6/1974	Martin			

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William et al

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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
HP	AA	2447828	2/1945	West			
HP	AB	4176951	12/1979	Robert et al.	356	33	
HP	AC	4179217	12/1979	Robert et al.	356	33	
HP	AD	5793460	8/1998	Lacey et al	356	73	
HP	AE	5166752	11/1992	Spanier et al.	356	369	
HP	AF	4054812	10/1977	Lenner et al.	313	44	
HP	AG	4322165	3/1982	Ellenbracht et al.	356	316	
HP	AH	4875773	10/1989	Burns et al.	356	328	
HP	AI	6414302	7/2002	Freehoff	250	225	
HP	AJ	5091320	2/1992	Aspner et al	437	8	
HP	AK	4770895	9/1988	Hartley	427	10	

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		1	WO 01/08625 A3	SeTech Invention
		2	US2002/0149774 A1	Mc Aninch
HP		3	UVV-VASE, JA William	Marketing Flyer ✓

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FORM PTO-1449 REV. 7-00 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE LIST OF PRIOR ART CITED BY APPLICANT (Use several sheets if necessary)	ATT. DOCKET NO. _____ SERIAL NO. _____ APPLICANT <u>Woolson et al</u> FILING DATE _____ GROUP _____
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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
HP	AA	6 493 097	12/2002	Ivarsson	356	630	
HP	AB	5 229 833	7/1993	Stewart	356	364	
HP	AC	5 337 146	8/1994	Azzam	356	367	
HP	AD	6 031 619	2/2000	Wilkins et al	356	419	
HP	AE	5 818 596	10/1998	Inai et al.	356	381	
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						

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							YES	NO
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	AM							

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1		(US 2003/0011996 A1	Watts et al	4/2003
		2 US 2003/0150997 A1	Chen et al	8/2003

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PLEASE USE THIS FOR PTO FORM 1449 REGARDING SCIENTIFIC ARTICLES

- ~~Regression Calibration Method For Rotating Element Ellipsometers", which appeared in Thin Film Solids, Vol. 234 in 1993.~~
- HP "A New Purged UV Spectroscopic Ellipsometer to Characterize Thin Films and Multilayers at 157nm", Boher et al., Proc. SPIE, Vol. 3998, (June 2000). ✓
- HP "Characterisation of Thin Films and Multilayers in the VUV Wavelength Range Using Spectroscopic Ellipsometry and Spectroscopic Photometry", Boher et al., 157nm Symposium, May 2000). ✓
- HP "Progress in Spectroscopic Ellipsometry: Applications from Ultraviolet to Infrared", Hilfiker et al., J. Vac. Sci. Technol. A, (Jul/Aug 2003). ✓
- HP "Atomic Scale Characterization of Semiconductors by In-Situ Real Time Spectroscopic Ellipsometry", Boher et al., Thin Solid Films 318 (1998). ✓
- HP "Optical Characterization in the Vacuum Ultraviolet with Variable Angle Spectroscopic Ellipsometry: 157nm and below", Hilfiker et al., Proc. SPIE Vol. 3998 (2000). ✓
- HP "Feasibility and Applicability of Integrated Metrology Using Spectroscopic Ellipsometry in a Cluster Tool", Boher et al., SPIE Vol. 4449, (2001). ✓
- ~~Four papers authored or co-authored by Collins, which describe use of multichannels and rotating element ellipsometers, including rotating compensator, but not in an environmental chamber are:~~
- HP "Characterization of Wide Bandgap Thin Film Growth Using UV-Extended Real Time Spectroscopic Ellipsometry Applications to Cubic Boron Nitride", Zapien et al., J. of Wide Bandgap Materials, Vol 9, No. 3 (Jan 2002); ✓
- HP "Automated Rotating Element Ellipsometers: Calibration, Operation, and Real-Time Applications", Collins, Rev. Sci. Instrum. 61 (8) (aug. 1990); ✓
- HP "Waveform Analysis With Optical Multichannel Detectors: Applications for Rapid-Scan Spectroscopic Ellipsometers", An et al., Rev. Sci. Instrum. 62(8), (Aug. 1991); and ✓
- HP "Multichannel Ellipsometer for Real Time Spectroscopy of Thin Film Deposition for 1.5 to 6.5 eV", Zapien et al., Rev. Sci. Instrum. Vol. 71, No. 9, (Sept. 1991). ✓